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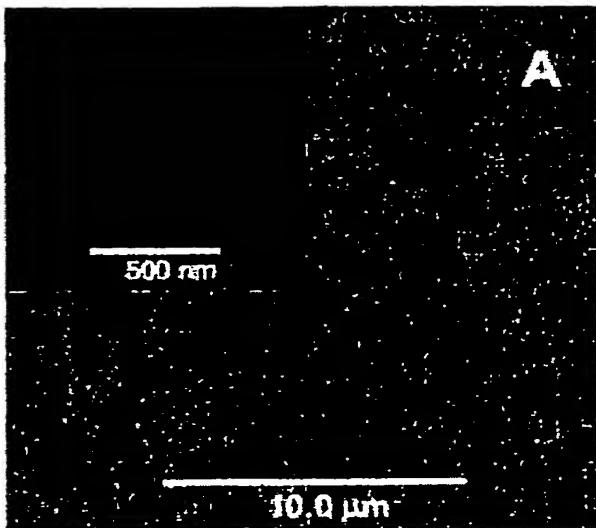
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(54) Title: METHOD FOR FORMING ZNO NANO-ARRAY AND ZNO NANOWALL FOR UV LASER ON SILICON SUBSTRATE



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(57) Abstract: Provided are low-temperature formation methods of a perfectly oriented ZnO nanorod array and a new-type ZnO nanowall array having a new crystal growth rate, morphology, and orientation, from ZnO nanoparticles coated on a substrate. The method of forming the ZnO nanorod array includes synthesizing ZnO nanoparticles, coating on a substrate the ZnO nanoparticles serving both as a buffer layer and a seed layer, and growing the ZnO nanoparticles into crystals in a nutrient solution containing Zn nitrate, Zn acetate, or a derivative thereof, and hexamethylenetetramine. The method of forming the ZnO nanowall array includes synthesizing ZnO nanoparticles, coating on a substrate the ZnO nanoparticles serving both as a buffer layer and a seed layer, and growing the ZnO nanoparticles into crystals in a nutrient solution containing Zn acetate or its derivative and sodium citrate.

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